

REMARKS

This is in response to the non-final Office Action dated April 1, 2009, in which claims 31-43 were pending, claims 40-43 were withdrawn from further consideration pursuant to 37 CFR 1.142(b), and remaining claims 31-39 were rejected under 35 USC §103(a) as being unpatentable over Lima (US 6503547), with claim 32 being further objected to under 37 CFR 1.75(c).

With this Amendment, the applicant affirms the provisional election of Group 1, claims 31-39 with traverse. Furthermore, claim 31 has been amended and claim 32 has been cancelled without prejudice. Withdrawn claim 40 has also been amended to change its dependency from pending independent claim 31. The application, with pending claims 31 and 33-39 still under consideration, is in condition for allowance, and notice to that effect (as well as rejoinder and allowance of withdrawn claims 40-43) is respectfully requested.

Claim Objections

In the Office Action, claim 32 was objected to under 37 CFR 1.75(c) as being of improper dependent form for failing to further limit the subject matter of the previous claim. With this Amendment, claim 32 has been cancelled without prejudice, rendering the objection moot.

Rejection under 35 USC §103(a)

In the Office Action, claims 31-39 were rejected as being obvious over Lima (US 6503547), in part for its teaching of a method of disinfecting the surface of perishable products with an atmosphere of ozone at a concentration of 0.1ppm for 8 hours at 12°C, and in a substantially closed room in which natural perishable products are stored.

A. **The combination of references do not suggest all limitations of the claims.**

With this Amendment, claim 31 explicitly recites suppressing the expression of signal transduction genes of perishable harvested crop products by exposing them to a gaseous mixture of

air and ozone. This amendment is supported in the specification on page 10 in the last two paragraphs, for example. Lima lacks any teaching or suggestion of this claimed process. While the use of ozone for the purposes of killing bacteria and fungi on foodstuffs is disclosed in Lima, there is no disclosure of the use of ozone to stimulate the endogenous defense mechanism of a perishable product by suppressing signal transduction genes, as the currently amended claims require. When determining whether a claim is obvious, an examiner must make “a searching comparison of the claimed invention – including all its limitations – with the teaching of the prior art.” *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995). Thus, “obviousness requires a suggestion of all limitations in a claim.” *CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003)(citing *In re Royka*, 490 F.2d 981, 985 (C.C.P.A. 1974)). Because Lima fails to teach or suggest all of the elements of independent claim 31, the rejection of claim 31 and 33-39 that depend therefrom should be withdrawn.

B. One skilled in the art would not have been motivated to practice the currently claimed invention.

Prior to the applicant’s disclosure, one skilled in the art would not have been motivated to stimulate the endogenous defense mechanisms of a perishable harvested crop product against microbial attack by using ozone to suppress the expression of signal transduction genes of product. The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. (MPEP 2143.01). To avoid hindsight analysis under 35 USC §103, the content of the prior art is determined at the time the invention was made. (MPEP §2141.01). "It is difficult but necessary that the decisionmaker forget what he or she has been taught . . . about the claimed invention and cast the mind back to the time the invention was made (often as here many years), to occupy the mind of one skilled in the **art. >...<" (MPEP §2141.01) (citing *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984)).

The prior art of record, Lima, teaches that at the time the invention of the applicant was made, ozone had been recognized for its bactericidal and fungicidal effects due to its oxidative character. (Col. 2, lines 63-65). As Lima discusses, ozone has been used to purify air conditioning systems and to sanitize products. (Col. 1, lines 13-15). Accordingly, the purpose of Lima is to destroy microbial spoilage organisms on the surface of perishable products, and Lima only teaches ozone for its commonly known disinfecting properties. In light of these teachings, one skilled in the art at the time the claimed invention was made would only have possessed knowledge of utilizing ozone as a disinfectant to eliminate organisms from the surface of perishable products. However, this would not have suggested to one skilled in the art the claimed process of using ozone to induce endogenous defense mechanisms in the perishable products by suppressing the signal transduction genes in those products. Therefore, one skilled in the art would not have been motivated to practice the currently claimed process for inducing endogenous defense mechanisms in perishable products.

C. One skilled in the art would not have had a reasonable expectation of success in practicing the claimed invention.

The prior art can be modified or combined to reject claims as prima facie obvious as long as there is a reasonable expectation of success. (MPEP 2143.02) Whether an art is predictable or whether the proposed modification or combination of the prior art has a reasonable expectation of success is determined at the time the invention was made. (MPEP 2143.02). At the time the currently claimed invention was made, one skilled in the art would not have had a reasonable expectation of success in modifying the teachings of Lima to use ozone for inducing the endogenous defense mechanisms in perishable products by suppressing the signal transduction genes in those products. The prior art of record, Lima, teaches that at the time the invention of the applicant was made, ozone had been recognized for its bactericidal and fungicidal effects due to its oxidative character. (Col. 2, lines 63-65). As Lima discusses, ozone has been used to purify air conditioning systems and to sanitize products. (Col. 1, lines 13-15). Accordingly, the purpose of Lima is to destroy microbial spoilage organisms on the surface of perishable products, and Lima only teaches

ozone for its commonly known disinfecting properties. In contrast, the underlying technical purpose of the present invention is to use ozone not for simply disinfecting surfaces, but for inducing endogenous defense mechanisms in perishable products by controlling gene expression. Using the currently claimed process, the development of microbial spoilage organisms is inhibited on treated products even after the period of ozone exposure, and this effect is not limited to the surface of the crop. For example, if a tomato treated by the process of the currently claimed invention is damaged post treatment, development of microbial spoilage on the exposed flesh is resisted. No prior art of record or other evidence has been provided that would indicate one skilled in the art would reasonably expect to succeed at using ozone to suppress signal transduction genes and stimulate the endogenous defense mechanisms of a perishable harvested crop in the manner claimed.

In view of the foregoing arguments, pending claims 31 and 33-39 are in condition for allowance, and claims 40-43 are eligible for rejoinder (since they depend from claim 31) and are in condition for allowance as well. Notice to that effect is respectfully requested. The Examiner is cordially invited to contact the undersigned at the telephone number below if such a call would in any way facilitate the allowance of this application.

The Commissioner is hereby authorized to charge any additional fee required under 37 C.F.R. 1.16 and 1.17 and credit any overpayments to Deposit Account No. 11-0982.

Respectfully submitted,

KINNEY & LANGE, P.A.

Date: June 30, 2009

By: /Alan M. Koenck/
Alan M. Koenck, Reg. No. 43,724
THE KINNEY & LANGE BUILDING
312 South Third Street
Minneapolis, MN 55415-1002
Telephone: (612) 339-1863
Fax: (612) 339-6580

AMK/JC